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Adler, A. B., Wright, K. M., Huffman, A. H., Thomas, J. L., & Castro, C. A.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)
Commander
Attn: Medical Research Unit
CMR 442
APO AE 09042

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13. ABSTRACT *(Maximum 200 words)*
Psychological screening began as part of the Joint Medical Surveillance Program for U.S. soldiers just prior to their completing their deployment to Bosnia. Since that time, soldiers have been screened across the deployment cycle: in garrison, as they prepare to deploy, at redeployment just prior to return, and at post-deployment several months later. The screening has also expanded to include deployments to Albania, Macedonia and Kosovo. Data from these various screening programs were compared using results from almost 12,000 soldiers from one division based in Germany between February, 1996, and June, 2000. Across these various screening programs, the procedures remained relatively constant. Military personnel completed a primary psychological screening survey designed to measure post-traumatic stress, depression, and alcohol abuse symptoms. If scores on one of the scales exceeded established criteria, a mental health member conducted a brief on-site interview to determine the soldier's referral need. Overall rates of exceeding primary screen criteria depended on when the screening occurred during the deployment cycle. Specifically, soldiers in garrison and preparing for deployment reported higher rates of distress than soldiers returning from deployment. The emerging model suggests that prevention and education efforts be concentrated on garrison and pre-deployment soldiers.

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Deployment Cycle Effects on the Psychological Screening of Soldiers

Amy B. Adler, Ph.D., Kathleen M. Wright, Ph.D., Ann H. Huffman, M.Ed.,

CPT Jeffrey L. Thomas Ph.D., and MAJ Carl A. Castro, Ph.D.

U.S. Army Medical Research Unit – Europe

Walter Reed Army Institute of Research

[1]The views expressed in the article are those of the authors and do not reflect the official policy or position of the Department of the Army, Department of Defense, or the U.S. Government (Para 4-3, AR 360-5).

Address correspondence to: Commander, CMR 442, ATTN: Medical Research Unit, APO AE 09042; International Tel.: +49-6221-172626

Deployment Cycle Effects on the Psychological Screening of U.S. Army Soldiers

Psychological screening began as part of the Joint Medical Surveillance Program conducted from 1996-1999 for U.S. soldiers just prior to their completing their deployment to Bosnia. Since that time, soldiers have been screened across the deployment cycle: in garrison, as they prepared to deploy, at redeployment just prior to return, and at post-deployment several months later. The screening has also expanded to include deployments to Albania, Macedonia and Kosovo. As a consequence of this expansion, screenings allow for comparisons of soldier well-being across the various deployment phases. While there are many goals in a screening program, the comparison of results from different deployment phases allows for the identification of risk factors at different phases of the deployment cycle (Castro, Adler & Huffman, 1999). This, in turn, can guide the design of prevention and education efforts. In order to facilitate these comparisons, we have selected the screening results from one U.S. Army Division based in Germany.

Method

Participants

A series of screening programs have involved almost 12,000 soldiers from one division based in Germany between February, 1996 and June, 2000. Results from these psychological screenings have been organized to represent the different phases of the deployment cycle. Missions included in the redeployment phase were Operation Joint Endeavor, Bosnia, where 4,746 soldiers from the division were screened from February through December of 1996; and Operation Joint Guard, Bosnia, with 3,891 soldiers screened from January 1997 through June of 1998. Soldiers in the post-deployment phase were screened from August through October, 1999,

and included 1,043 division members who had deployed to Albania for Task Force Hawk. The pre-deployment phase comprised 1,803 soldiers from this division screened from April through June, 2000 as they prepared to deploy to Kosovo. Finally, data collected from 338 Division soldiers between April and July, 1998, represent the garrison phase of the deployment cycle. Table 1 summarizes the different missions and their deployment phases.

Procedure

The procedures remained essentially similar across all of the screening programs. Military personnel completed a primary psychological screening survey designed to measure post-traumatic stress, depression, and alcohol abuse symptoms. If scores on one of the scales exceeded established criteria, a mental health staff member conducted a brief on-site interview to determine the soldier's referral need.

Instruments

The psychological screening survey included a section on soldier demographics and three scales measuring post-traumatic stress symptoms, depression and potential alcohol abuse. The 17-item Post-Traumatic Stress Disorder (PTSD) checklist (Cronbach's α=.91-.94), developed by U.S. Army Medical Research Unit-Europe (Castro & Adler, 1999; Bartone, Vaitkus, & Adler, 1994;) measured post-traumatic stress symptoms delineated in the Diagnostic and Statistical Manual for Mental Disorders IV (American Psychiatric Association, 1994). Items were rated on a 5-point scale (1=not at all to 5 =very often). Respondents who reported at least six symptoms (often or very often) were interviewed by mental health staff.

The 20-item Self-rating Depression Scale (Cronbach's α=.74-.76) (SDS; Zung, 1964, 1973), measured depressive symptoms on a 4-point scale (a little of the time, some of the time, a good part of the time, and most of the time). The cut-off criterion was a raw score of 44 points

midway in the mild depression range (Zung, 1993). In addition, personnel indicating any agreement with the statement, "I feel that others would be better off if I were dead", were also interviewed regardless of their overall cut-off score.

Alcohol abuse symptoms were measured using the CAGE Questionnaire (Ewing, 1984; Mayfield, McLeod & Hall, 1974). The CAGE Questionnaire (Split-half reliability = .53-.55) included items such as "Have you ever been annoyed by comments made about your drinking?" and "Have you ever felt guilty about drinking?" Respondents with affirmative responses to two or more questions were then interviewed.

Results

Data were analyzed to evaluate the impact of different phases of deployment on soldiers' responses to psychological screening. Overall rates exceeding primary screen cut-off criteria differed by deployment phase. The highest rates occurred during the pre-deployment (Kosovo) group where 23.9 percent of soldiers exceeded criteria on the primary screen. The lowest rates were found for the re-deployment phase (Bosnia) with 16.0 percent exceeding criteria on the primary screen. Soldiers who were deployed reported lower rates of exceeding criteria when compared to soldiers in garrison, χ^2 *(4,N=11,753)=76.48, p<.001.*

Differences in these overall patterns were also found for the three individual psychological scales. Soldiers in garrison reported the highest rates of post traumatic stress symptoms (5.9%), while soldiers during the re-deployment phase (Bosnia) reported the lowest rates (3.1%), χ^2 *(4, N=6,548)=7.30, p<.01.* On the depression scale, soldiers screened during pre-deployment (Kosovo; 15.1%) and garrison (Germany; 13.6%) reported higher rates of depression symptoms than soldiers screened during post-deployment (Albania; 12.1%) and re-deployment (OJE Bosnia, 8.0%; OJG/OJF Bosnia, 9.2%), χ^2 *(4,N=11,821)=85.84, p<.001.* On the alcohol

scale, the pre-deployment (Kosovo; 11.3%), and post-deployment (Albania; 11.4%) rates were similar. The re-deployment (OJE Bosnia, 8.4%; OJG/OJF Bosnia, 7.5%), and garrison (Germany; 6.8%) rates were similar to each other, but lower than the pre-deployment and post-deployment rate, $\chi^{2}(4, N=11,760)=33.98, p<.001$. Figure 1 summarizes data collections during different phases of deployment and rates of exceeding criteria on the primary screen.

Conclusion

Data from several different psychological screening programs conducted across different deployments cycle phases indicate a pattern of psychological effects. Rates of exceeding primary screen criteria depended on when the screening occurred during the deployment cycle. Specifically, soldiers in garrison and preparing for deployment reported higher rates of distress than soldiers returning from deployment. Results also suggest some unique deployment cycle patterns for specific symptom categories. For example, alcohol problem rates were highest at pre- and post-deployment, suggesting an "alcohol compensation" effect for soldiers preparing for or returning from an alcohol-free environment.

It should be noted that the sample groups were not matched and the data were collected at different times. Some of the differences in screening results could be attributed to the unique nature of each deployment, the maturity of the theater or the level of threat. Nevertheless, the data suggest future directions for analyzing patterns of findings related to the deployment cycle. The emerging model suggests that prevention and education efforts be concentrated on garrison and pre-deployment soldiers. Additional screening issues that require study include further development and assessment of screening scale content, training of mental health assets in psychological triage, and evaluation of screening program effectiveness.

In an environment where the rate of military operations for U.S. Forces is increasing, it is critical to provide operational commanders and division health staff information on the psychological readiness of the deploying force. A psychological screening program can identify risk factors at different phases of the deployment cycle and provide continuous monitoring of the mental health of soldiers, resulting in effective prevention and education efforts.

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Study Description	Mission	Screening Location	N	Dates
Garrison	Garrison (Germany)	Germany	338	Apr 98 – Jul 98
Pre-deployment	Task Force falcon (Kosovo AP)	Germany	1,803	Apr 00 – Jun 99
Re-Deployment	Operation Joint Endeavor (Bosnia AO)	Hungary	4,746	Feb 96 – Dec 96
Re-Deployment	Operation Joint Guard (Bosnia AO)	Bosnia	3,891	Jan 97 – Jun 98
Post-Deployment	Task Force Hawk (Albania AO)	Germany	1,043	Aug 99 – Oct 99

NOTE: AO = Area of Operations

Figure 1. Summary of Deployment Phase and Mission

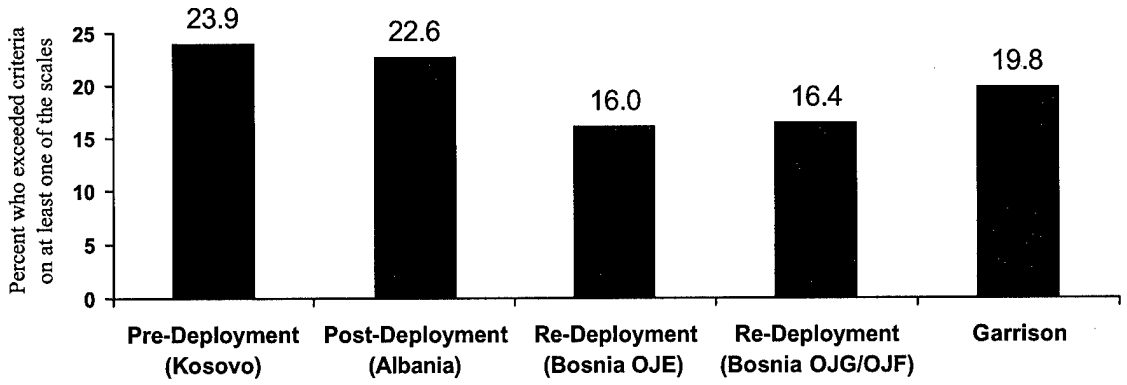

Figure 2. Rates of exceeding criteria on primary screen scales as a function of deployment cycle phase.